

ATTACHMENT 3

Comments from Tacoma Water

Policy Statement: In response to S5.C.8.b.ii.2 of the City of Tacoma's Phase I Draft Municipal Stormwater NPDES and State Waste Discharge General Permit.

Section S5.C.8.b.ii.2 addresses Illicit Connections and states:

- (2) The regulatory mechanism required in S5.C.8.b.ii above, shall prohibit the following categories of non-stormwater discharges unless the following conditions are met:

Discharges from potable water sources, including water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments.

Response: Water line flushing and discharges from potable water sources

Introduction

Tacoma Water serves more than 300,000 people in the cities of Tacoma and University Place, plus portions of Puyallup and Pierce and South King counties. Water is supplied directly to residences, businesses and industries through some 1,157 miles of water mains in sizes up to 96 inches in diameter.

For more than 80 years, Tacoma Water has managed the Green River watershed as its primary source of supply, providing up to 72 million gallons per day. Tacoma Water is fortunate to have the very high quality Green River water, the North Fork wells, and an active watershed control program. Because of these, Tacoma Water is in a small group of water systems that is not required to filter the surface water by the Washington State Department of Health.

In addition to surface and groundwater sources in the Green River watershed, Tacoma Water owns 24 wells located in and around the city. Tacoma Water's wells have a short-term combined pumping capacity of about 60 million gallons per day.

Tacoma Water has built a storage system consisting of the 210-million-gallon McMillin reservoir near Puyallup, plus 16 other reservoirs, standpipes and tanks that can store up to 78 million gallons of additional water. This system, operated mostly by gravity,

assures that water can be supplied economically to customers throughout the Tacoma Water service area.

Tacoma Water customers use water in a variety of ways. Approximately 7.5 percent of Tacoma's water is used for sewer and water main flushing, fire fighting, road construction projects, reservoir cleaning, fire-flow testing or is lost through leaks. This is a comparatively low percentage of "unaccounted for" water.

We are required to monitor our water sources for inorganic chemical and physical substances.

Flushing Program/Reservoir Cleaning

Flushing

Tacoma Water conducts three types of distribution system flushing: systematic (unidirectional); dead end; and spot flushing. The systematic flushing program was initiated in 1998. Systematic flushing involves moving through the system starting at the source, isolating sections of mains, and flushing at a velocity sufficient to suspend and remove accumulated sediments. Ten percent of our system is flushed each year. Dead end flushing is performed to remove stale water from portions of the distribution system without circulation. Finally, spot flushing is performed in response to or in anticipation of water quality concerns. These flushing efforts help minimize water quality degradation in the distribution system ensuring our customers receive high quality water and that water samples comply with WAC 246-290 bacteriological testing requirements. System flushing is necessary to protect the Health and Safety of our customers.

Safety – Tacoma water has to exercise, inspect and make sure all hydrants are working properly on a regular basis. Removal of sediments from the system through flushing also guarantees hydrants will not plug when opened by fire fighters.

Health - To protect the public health from stagnant water in our system, we periodically flush our mains via opening of our hydrants and blow-off valves. The stagnation occurs where demand does not "change over" enough water in the mains, for example dead end mains with few services. In addition, flushing is used to remove sediment and other undesirable constituents that may accumulate within our system.

When conducting system flushing crews use dirt bags, diffusers and sock filters meeting Best Available Science criteria to help filter out accumulated sediments that are flushed from our water mains. In addition, Tacoma Water works closely with the City of Tacoma, Public Works, Environmental Services', Source Control Representatives regarding any and all discharges either to the surface water conveyance system or the waste water conveyance system. Through this coordination, Tacoma Water verifies no downstream surface waters will be impacted by flushing operations.

Reservoirs

Most of Tacoma Water's reservoirs are now covered reservoirs except for McMillan reservoir. Reservoirs are cleaned by draining (skimming) water from the top of the reservoir down to some predetermined level that avoids stirring up any sediment that has settled to the bottom of the reservoir. The remaining lower levels are then drained to settling basins designed to settle out any remaining suspended solids and undergo dechlorination and pH adjustment if needed. Sediment free water meeting 5 NTU is then discharged to the municipal storm systems. Again, this is coordinated with City of Tacoma, Public Works, Environmental Services', Source Control Representatives regarding any and all discharges either to the surface water conveyance system or the waste water conveyance system. Through this coordination, Tacoma Water verifies no downstream surface waters will be impacted by cleaning operations.

Sediment

Because our supply system is unfiltered, and despite the Green River's very high quality, it is grossly estimated that approximately 150 tons of fine, suspended solids does enter our system each year. A significant fraction of this harmless river sediment can and does accumulate within our transmission system, 17 reservoirs, and 1060 miles of mains where velocities are low.

Tacoma Water's flushing and reservoir cleaning programs are designed to maintain the systems' functionality and provide potable water for consumption, commercial and industrial uses, and fire protection.

Corrosion

The Environmental Protection Agency created a regulation to deal with lead and copper corrosion called the "Lead and Copper Rule." Compliance with this rule has required Tacoma Water to install pH adjusting treatment, and distributed water typically has a pH between 7.5 and 8.2.

While our corrosion control program has improved water quality and reduced corrosion of household and plumbing and distribution piping, some corrosion of older iron pipes can still occur. Tacoma Water's flushing program is designed to remove any possible corrosion (rust) that may accumulate within our mains.

Disinfection

Tacoma Water adds chlorine at its Headworks on the Green River to disinfect the water entering our system. Chlorine is also added at several reservoir locations to assure chlorine residuals are present throughout our system. Ongoing monitoring as general described below continually verifies a residual is maintained.

Tacoma water also disinfects new pipes with dry calcium hypochlorite sufficient to produce a chlorine residual of no less than 25 p.p.m. after a 24 hour period. After 24 hours, the line is tested for bacteria and then flushed with the flush water dechlorinated using asorbic acid (Vitamin C) and then discharged to a sanitary sewer. The new main is the filled and tested again in 24 hours.

Monitoring

Federal regulations require more extensive testing than ever before. Water utilities used to test for just four or five organic chemicals and a dozen inorganic chemicals. Now testing must be done for over 80 regulated contaminants and more than 50 unregulated chemicals, even if they don't exist in our water.

Each week Tacoma Water takes samples from around the water system to check for bacteria and chlorine residuals. State Department of Health rules require 150 samples each month for a system of Tacoma Water's size. We routinely take more than 220 samples per month

Tacoma Water also samples for microscopic organisms such as giardia and cryptosporidium. If a sample indicates the presence of these organisms the State Health Department is immediately notified. Samples taken over the past 4 years indicate no to very low levels of these organisms in our Green River source water. Source water total and fecal coliform samples we are collected daily and are present in very low concentrations. These organisms are rapidly disinfected by chlorine.

Tacoma Water prides itself on the high quality of water provided to its customers and its continued support of regional water quality goals.